Journal of the Amateur Photographic Society of Madras.

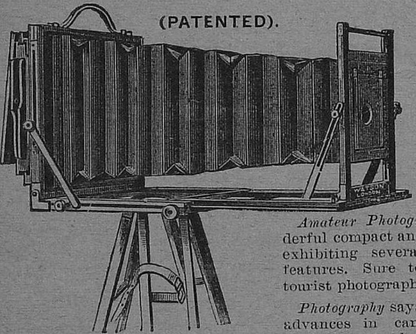
Vol. 4.—No. 5. **Price As. 8.**

April, 1898.

HIGHEST CLASS PHOTOGRAPHIC REQUISITES.

WATSON'S ACME TOURIST'S CAMERAS AND RECTILINEAR LENSES.

(PATENTED).



Press Opinions.

British Journal of Photography says:—"It folds into a smaller compass, and is lighter and more portable than any pattern we have yet seen."

Amateur Photographer says:—"A wonderful compact and fairy-like instrument exhibiting several new and important features. Sure to be a favourite with tourist photographers."

Photography says:—"One of the greatest advances in camera construction yet reached, away ahead of anything else."

Sizes and Prices.	$6\frac{1}{2}$ x $4\frac{3}{4}$	$7\frac{1}{2}$ x 5	$8\frac{1}{2}$ x $6\frac{1}{2}$	10 x 8	12 x 10	15 x 12
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Camera and three double slides	9 12 0	10 0 0	12 5 0	14 0 0	16 12 6	21 0 0
Rapid Rectilinear Lens with Iris diaphragm	4 0 0	4 10 0	5 0 0	6 15 0	8 15 0	11 10 0
Solid Leather Travelling Case with spring lock ...	1 15 0	1 15 0	2 2 0	2 10 0	3 0 0	3 15 0
Rotating Turntable in base, and Tripod Stand ...	2 2 0	2 2 0	2 2 0	2 10 0	2 15 0	3 3 0
	17 9 0	18 7 0	21 9 0	25 15 0	31 2 6	39 8 0

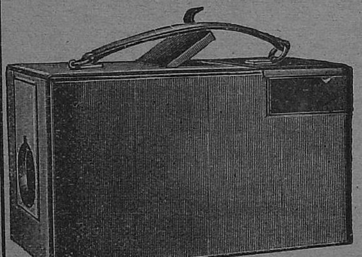
Aluminium Fittings—Reduced Prices.

½-plate and $7\frac{1}{2}$ x 5	$8\frac{1}{2}$ x $6\frac{1}{2}$	10 x 8	12 x 10	15 x 12
£2 10 0	£3 0 0	£3 10 0	£4 0 0	£4 10 0

Brass binding extra—recommended for India.

£1 10 0	£1 15 0	£2 0 0	£2 10 0	£3 0 0

THE VAN NECK HAND CAMERA.

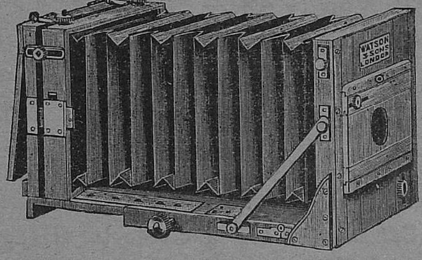


With Focussing Finder showing full size objects.

¼ plate size for 12 Plates
£10 10 0
or for 24 Films
£11 5 0

ALSO MADE IN
LANTERN SIZE ($3\frac{1}{4}$ sq.)
Fitted with Eastman Roll Holder carrying 70 exposers,
£10 0 0

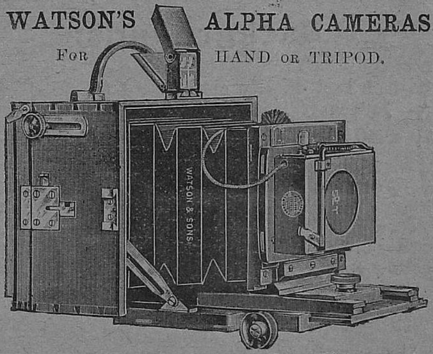
WATSON'S PREMIER CAMERA.



For Studio and Field. Made with Square Bellows and Reversing Back.
PRICES, with 3 Double Slides:
½ plate, £9 12   Whole pl., £12 5   10 x 8, £14 0   12 x 10, £16 12 6
A Repeating Back can be fitted to this Camera for Studio purposes:
½ plate, £2 0   Whole pl., £2 10   10 x 8, £3 3   12 x 10, £3 10

WATSON'S ALPHA CAMERAS.

FOR HAND OR TRIPOD.



No 2 Alpha Outfit.

Sizes	¼ plate.	5 x 4	½ plate.
	£ s. d.	£ s. d.	£ s. d.
Camera with double action front, double extending base, swing back, and rackwork focussing adjustment, and three double dark slides	6 10 6	7 1 6	8 5 6
Rapid Rectilinear Lens with Iris Diaphragm ...	2 17 6	3 2 6	4 0 0
Exposure Shutter	1 0 0	1 0 0	1 0 0
Finder	0 10 6	0 10 6	0 10 6
Best Solid Leather Travelling Case, with Lock and Key.	1 2 0	1 5 0	1 10 0
	12 0 6	12 19 6	15 6 0

Made in box form, of sufficient size to contain, when closed, the Bellows, Front, Lens, Shutter and Finder. The front of the box falls down, and is held rigid and horizontal by a strut; the Camera is then extended along it to focus, a scale of distances is marked, but a ground glass is provided and can be used if desired.

Customers' own Lenses and Slides can also be fitted.

A discount of 5 per cent. from all above-quoted prices is allowed for Cash with Order.

Fully illustrated and descriptive Catalogue of Photographic Apparatus and Accessories sent post free on application to

W. WATSON & SONS,

Opticians to H. M. Govt.,
Sole Address: **313, High Holborn**
LONDON.

Factories:—9, 10, 11, 16 & 17, Fulwoods Rents, W. C. *Established 1837.*

Awarded 38 Medals for excellence of instruments at the leading International Exhibitions of the world, including Chicago, 1893, five medals; Kimberley, 1892, three medals; Calcutta Photo. Society's Exhibition, 1889; Paris Universal Exhibition, 1889, two gold medals; and at London, Melbourne, &c. Nine times placed alone at Exhibitions, receiving a higher award than any competitor.

8th issue'

PRINTED AT THE SCOTTISH PRESS, MOUNT ROAD BRANCH, MADRAS.

Spencer & Co. (Ld.)

PHOTOGRAPHERS' REQUISITES.

A B C Developer.

This is a new single solution developer prepared by ourselves after years of experiments and tests, and now we can confidently place it before photographers with a feeling that it will give entire satisfaction. For density and perfection in bringing up detail it cannot be excelled, and its perfect simplicity in manipulation has induced us to give it the above title.

In concentrated form 6 oz. bottle to prepare 96 oz. developer, Rs. **1-8.**

Advantages:—

- No staining or fogging.
- Will keep any length of time.
- Can be used over and over till strength exhausted.
- Can be used on any class of plates.

Backgrounds.

	Rs.	A.
Scenic on best quality cloth, 8 x 6 ft. ...	20	0
Plain on best canvas in grey, blue or cream, 70 x 40 ins.	4	8

Darkroom Lamps.

		Rs.	A.
"The Rubalux", best known lamp with red and yellow combination front,	large size ...	12	8
Do. do.	small „ ...	8	14
"The Eclipse"	...	4	12
"The Amateur"	...	5	0
"The Triangular"	...	2	12
Ruby Chimney Lamp	...	1	8

Border Negatives.

A large range of floral negatives of natural flowers for making charming and artistic pictures—with oval and fancy openings.

		Rs.	A.
Best quality celluloid, $\frac{1}{2}$ plate size,	each ...	2	0
Do. do. $\frac{1}{4}$ „	„ ...	1	0

Light Tight Boxes.

	Rs.	A.
Best quality tin to hold 12 quarter plates ...	1	0
Do. do. 12 half „ ...	1	8
Do. do. 12 full „ ...	2	0

Other sizes made to order.

Rubber Squeegees.

Size	Ins. 3	4	5	6	8
Price	Rs. 1-0	1-4	1-10	2-0	2-8

New Photo Mounts.

	Per 100 Rs.	Per 100 A.	Per doz. Rs.	Per doz. A.
Cream enamelled, gilt edge, C-D-V. ...	2	4	0	5
Do. do. Cab. ...	5	8	0	12
Do. chocolate line, C-D-V. ...	1	2	0	3
Do. do. Cab. ...	2	12	0	6
Plate sunk, grey, $\frac{1}{4}$ plate view size.	5	8	0	12
Do. do. $\frac{1}{2}$ do. ...	6	8	1	0
Do. do. $\frac{1}{1}$ do. ...	11	8	1	10
Do. granulated, $\frac{1}{4}$ do. ...	6	8	1	0
Do. do. $\frac{1}{2}$ do. ...	7	8	1	2
Do. do. $\frac{1}{1}$ do. ...	12	0	1	12
Grey classic, slip in, $\frac{1}{4}$ do. ...	—		1	2
Do. do. $\frac{1}{2}$ do. ...	—		2	0
White enamelled, Oxford lined, $\frac{1}{4}$ plate ...	2	4	0	6
Do. do. $\frac{1}{2}$ „ ...	3	0	0	8
Do. do. $\frac{1}{1}$ „ ...	4	0	0	10
Olive green enamelled, gilt bevelled edge, C-D-V. ...	—		0	7
Do. do. Cab. ...	—		0	14

Albums.

For unmounted Photographs.

		Rs.	A.
Slip in pattern,	to hold 24 quarter plate prints.	1	8
Do.	do. 48 „ „ ...	2	4
Do.	do. 24 half „ ...	2	0
Do.	do. 48 „ „ ...	3	4
Paste Down,	do. 24 quarter „ ...	1	4
Do.	do. 48 „ „ ...	2	2
Do.	do. 24 half „ ...	1	12
Do.	do. 48 „ „ ...	3	4
Do.	do. 24 full „ ...	2	12
Do.	do. 48 „ „ ...	5	0

Madras, Bangalore and Ootacamund.

Vol. 4. No. V. **April, 1898.**

Journal of the Amateur Photographic Society of Madras.

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EDITORIAL NOTES.

Mr. ROBERT M. REEVES has given some very useful hints on the preservation of Photographs; he says that, as a rule, "a print appears to better advantage when appropriately mounted, whether it be put in a frame, an album, or a home-made book. The latter methods preserve the prints in compact and portable form, and there is less likelihood of their being lost than when mounted on cards. Where photographs are used in making a record, space for reading matter is desirable; as, for instance, in securing a series of views of a locality, making a souvenir of a trip by land or sea, collecting sets of views of architectural subjects, marine snap-shots, animal studies, street scenes, historical buildings, etc. The placing of such a series in a book is a work requiring some patience, but the result will surely justify the trouble. The style of the book will vary with the taste and means of the collector, and may be very elaborate or very economical. Bromide, carbon, and other prints of high grade appear best when mounted on cardboard, but most pictures show sufficiently well with less expensive prints and mounting. Many amateurs have their printing done by stock dealers or professionals, in which case they may have the prints unmounted, for placing in a book, or, if preferred, the picture can be placed on one end of the card, leaving room at the other end for a title, and also for glueing a strip of some fabric, for purposes of binding. Variety of effect may be given to the contents by making the prints by different processes and

15493-35

trimming them to various shapes—round, oval, square or diamond shaped. Prints of different colors placed on the same page sometimes make an agreeable contrast.

Procure a scrap-book of size sufficient to leave a margin for number, date, title and descriptive matter if desired. Attach the print to the page by its corners, with small colored seals. The reading matter may surround the print, or be placed underneath it, or typewritten matter may be neatly pasted in, underneath the photograph, if desired. After one side of the leaves of the book are filled, a sheet of paper may be interposed, and additional prints put in without risk of chafing or rubbing. Prints preserved in this way will not cockle, as often occurs with paste, but will remain flat, and are removable without damage to the paper. A book of blue-prints may be made in very neat manner by simply using a sheet, say of 5 x 8 size for a 4 x 5 print, printing the picture on the right hand end, and masking all the rest of the sheet. The white portion may then be used for title, etc., and a strip at the left side turned up for binding. The leaves are then bound as usual.

In making up or compiling the book, good examples of the arrangement of the printed matter and illustrations may be found in the magazines of the day. By these methods of preserving prints, quite a library may, in time, be formed, which will serve to while away many an hour of leisure. If one is pursuing some special line of study which admits of illustration by photography, the systematic preservation of information in this matter will be found very useful. A book with manilla leaves will answer most purposes, is inexpensive, and everywhere obtainable, and furnishes a much better way than keeping card mounts loose in a box or drawer: hence these suggestions."

SHE (pointing to photograph): "There, my dear, is the result of my call on the photographer you recommended." He: "Yes, I have been examining it?" She: "You surely do not call it a good picture, do you?" He: "To be sure not, but that is not the fault of the photographer."

OPEN COMPETITION.

Instantaneous Photographs of Soaring Birds.—The Boston Camera Club, representing a gentleman of high standing in matters pertaining to aërial navigation, is authorized to make the following offer of prizes for *instantaneous photographs of large soaring birds:*

A prize of one hundred dollars is offered by the Boston Camera Club for the best instantaneous photograph of a large bird in the act of soaring.

An additional prize of fifty dollars is offered for the greatest number of instantaneous photographs, offered by one photographer, of large birds in the act of soaring.

By "soaring" is meant the attitude of the bird in the air when no wing-motion is apparent.

The purpose for which the photographs are desired—namely, the study of wing-angles and a possible movement unappreciable to the eye of the observer—necessitates that the figure of the bird should be at least half an inch long on the print. If the figure is small, but clearly defined in detail, enlargements will be preferable to contact prints, and will be judged of equal merit with direct prints.

Careful notes should be written on the back of each picture, detailing the appearance to the eye, the quickness of the shutter, the angle of the camera, etc.; also the full name and address of the contributor. Two prints of each picture should be sent.

All contributors must prepay the transportation charges of their exhibits (which may be simply card mounts), and in no case will they be returned.

Photographers throughout the world are cordially invited to compete.

This offer remains open until October 1, 1896; but, if on that date at least, 100 different photographs have not been received, the limit of time may be extended, of which due notice will be given.[1]

The Club freely offers its galleries for the exhibition of the pictures submitted, and pledges its best effort to select judges fully competent to decide upon their merits and to make the awards.

All contributions should be sent to the Boston Camera Club, 50, Bromfield Street, Boston, Mass., U. S. A., and marked "Cabot Competition."

For further information apply to Mr. Samuel Cabot, care of Boston Camera Club, at above address.

Tinted Bromide Prints.

The prints should, in the first instance, be lightly developed. Make up the following solutions:

A.—Nitrate of lead	8	parts.
Ferricyanide of potash ...	12	,,
Water	100	,,
B.—Schlippe's salts	2	,,
Ammonia ·880	1	part.
Water	30	parts.
C.—Neutral chlorate of potash	1	part.
Water	25	parts.
D.—Perchloride of iron ...	1	part.
Water	10	parts.
E.—Chloride of copper ...	1	part.
Water	10	parts.

The prints, after development, having been fixed and washed as usual, are first bleached in solution A, then washed and placed in either of the baths according to colour required. Brown, Solution B; yellow, solution C; green, place the yellow print in D; red, place the yellow print in E. Care must be taken not to leave the prints too long in solution A. After colouring, wash well.

[1] One hundred different photographs not having been entered, the time for closing competition has been extended to October 1, 1898.

OUR HOME LETTER.

March 22nd, 1898.

Some very good suggestions for the consideration of photographers were thrown out by Mr. Alfred East, the well-known painter, at a recent meeting of the Camera Club. Photographers, he said, did not, as a rule, pay sufficient attention to composition. Painters had gained some help from photographers on the subject of trees, but often the men who took such photographs had not been wise, either in choosing the specimen, or the special point of view. He was particularly happy in his remarks relative to instantaneous photographs of moving objects. Here he regarded the difference between a photograph and a painting to be that the former always gave one the feeling that the thing represented was dead, while the painting gave the impression of life. There was a real, if subtle, difference between a living and dead line. The pose, position, or movement often selected by photographers was very unfortunate. The idea of motion was difficult to portray in a painting, and rarely, if ever, seen in a photograph. The painter aimed at an aggregate of many minor movements. Mr. East threw out a suggestion which certainly merits trial by experiment. His idea was that the print should be a combination one from two negatives, one of them showing the parts which did not move, *e. g.*, rocks, houses, etc., which should be in sharp focus; the other somewhat slightly blurred, softened, or out of focus at those parts which it was desired should convey the idea of movement. Another important point to which he thought photographers should give more attention was the balance of light and shade, or, in a word, *Notan*, a Japanese term which meant a proper balance of dark and light. The allegation relative to composition is well deserved, and while photography as an art has made enormous strides during the last year or two, it is in treatment rather than composition that the most marked advancement has been made. By treatment we mean framing, mounting, and printing as opposed to arrangement of subject and light and shade, which is composition. The tendency is, though we should not be correct in saying that it is invariably the case, to spend too little time in the field before making an exposure. A photographer will make half a dozen exposures with comparatively little time spent in selection, and then proceed to pick out that one from among them which seems to him the most

harmonious. The true way would be to make fewer exposures, and give more time to exact arrangement of detail, or exact point of view.

Turning from art to practice, I alluded last month to the new developer named Ortol. Now another form of developer must be mentioned. The employment of acetone in connection with pyro and other developers in place of sodium carbonate has been recommended by Messrs. Lumière Bros., and they have put upon the market a two solution developer, consisting (1) of a concentrated solution of pyrogallic acid and sodium sulphite, and (2) pure acetone. The proportions employed are 25 °/₀ of the concentrated pyro with 75 °/₀ of water and 10 °/₀ of acetone. This developer gives fine, clear, black negatives of great brilliancy, absolutely free from stain. It can be advantageously applied in the case of over exposure, in this case adding the acetone drop by drop until the image appears. In this way over exposed negatives can be materially modified. The developer is supplied to Great Britain and the Colonies by Messrs. Fuerst Bros., Philpot Lane, London.

I regret to have to record the death of one whose name has been associated with important photographic investigations for some time past. I allude to Dr. F. Hurter, whose experiments in connection with Mr. Driffield on the sensitiveness of plates have proved of such service to the photographic world at large. Dr. Hurter was born at Schaffhausen in 1844, where he was educated at the State Schools. At 17 he became apprenticed to a dyer at Winterthur, but gave evidence of such capacity, that it was deemed desirable that he should pursue his studies further. He entered upon a course at Zürich, and subsequently at Heidelburg, where he took the degree of Ph. D. in 1866. The year following he came to England and entered the service of Messrs. Gaskell, Deacon and Co., Alkali Manufacturers of Widnes, with whom he remained until his death, becoming the head chemist in 1890, when the firm amalgamated with others and became known as the United Alkali Company, Limited. Mr. Driffield was engineer to the firm. The two gentlemen having formed a friendship for each other, entered upon the investigations which have made their name famous.

MATTHEW SURFACE.

PROCEEDINGS OF THE SOCIETY.

Monthly Meeting held at the Masonic Hall, Mount Road,

Friday, 1st April, 1898.

PRESENT.

MR. C. MICHIE SMITH, President, *in the chair.*

MR. V. G. LYNN.
MR. A. MANSFIELD.
DR. CARRUTHERS.
MR. W. H. OAKES.
MR. F. DUNSTERVILLE.
MR. A. PILKINGTON.
MR. H. J. STANLEY.

The minutes of the previous meeting held on the 4th March having been circulated to members in the last issue of the Journal, were taken as read and confirmed.

Read a letter addressed to Mr. F. Dunsterville by Mr. Clinton C. Hollenbacke of *The American Archæologist*, asking for the interchange with him of negatives or prints and giving particulars of the subjects.

Resolved to refer the letter to the Editress of the Journal, with a request that it might be inserted in the next number.

PICTURE.

"Bromide Prints," the subject for the evening were shewn by

HIS HIGHNESS THE ELAYA RAJAH OF TRAVANCORE.
MR. C. MICHIE SMITH.
MR. F. DUNSTERVILLE.
MR. J. W. CHAMBERS.

Mr. Chambers' set of pictures, chiefly of South African scenes, showed well the capabilities of different kinds of bromide paper.

Mr. Dunsterville's exhibits in addition to being very fine specimens of "Bromide prints," were specially interesting as the prints had been developed with "Ortol."

SUBJECT FOR JUNE.

It was decided that the subject for the meeting after next should be "Foliage."

DEMONSTRATION.

Mr. Dunsterville then proceeded to give a demonstration in Bromide Printing and the use of "Ortol" in place of the usual Ferro-oxalate developer. The following notes have been kindly supplied by him for the sake of those who were not present at the demonstration.

Bromide Printing.

For full details of contact printing process, see my paper re-published in the Journal of August 1895. The only alterations I would recommend are the substitution of Barnet or Morgan and Kidd's papers for Eastman and the use of Ortol as a developer in place of iron.

Developer. Stock No. 1. Ortol.

Ortol	... 3 drams.
Metabisulphite of Potash	... $1\frac{1}{2}$,,
Distilled Water ...	... 12 ounces.

Stock No. 2. Ortol.

Carbonate of Soda-recryst	... 19 drams.
Sulphite of Soda ...	... 10 ,,
Distilled Water ...	... 12 ,,

For use take

Of Stock No. 1 ...	.. $\frac{1}{2}$ ounce.
,, ,, 2 ...	... $\frac{1}{2}$,,
Bromide Potassium	... 6 grains.
Water *to*	... 4 ounces.

Fixer.

Hyposulphite of Soda	... 1 ounce.
Water *to*	... 5 ounces.

Paper for anything over $\frac{1}{2}$ plates should be rough surface—$\frac{1}{2}$ plates and under may be smooth.

After exposure, soak the sheet of paper in cold water for 50 or 60 seconds, lay flat in developing dish and drain off any superfluous water—pour the developer over and rock gently until image comes up strongly; just before the detail appears in the highest lights, pour off the developer, wash quickly in 2 or 3 changes of cold water, place print in fixing solution face downwards, letting it remain there for 15 to 20 minutes, shaking the dish occasionally and turning the print over 2 or 3 times; then wash in plenty of water, face downwards for half an hour, drain, blot off and wash face upwards in fresh water for half an hour, drain and dry on a cord or hang by a clip.

Two pieces of paper already exposed as follows were developed with the Ortol developer recommended above—they were enlargements from $\frac{1}{4}$ plate to $\frac{1}{1}$ plate. Exposure $3\frac{1}{2}$ minutes by daylight, Golerz lens, stop *f* 16, negative pointed to clear sky and shaded by two pieces of ground glass—for Mount Abu Temple view, and 3 minutes for bit of Itmadowlah's tomb at Agra—other details being the same for both.

Exposures made on the 19th March 1898.

Developed on the 1st April 1898.

ONLY A PHOTOGRAPH.

Only a photograph—
Fitter to make you laugh
Than to entrance the eye
Of stranger passing by.

Only a shock of hair—
Fitter a crow to scare
Than to be halo-crowned,
Or with choice fillets bound.

Only a common face,
Set in a fixed grimace:
Only a pair of eyes
That the word 'pair' belies.

Lips, nose, and all the rest
Not quite of Nature's best;
Clapped on at random too,
As it would seem to you.

Yet some one loves that face,
Thinking it no disgrace,
Finding nought commonplace
In it whate'er—
Faith, as of little child,
Pity, both meek and mild,
Charity undefiled,
All may be there.

* * *

Only a photograph—
And almost torn in half,
Faded to muddy tint
From an ill-washen print.

There, nought of posing made
Marvels of light and shade;
Retoucher's pencil ne'er
Gave it a thought or care.

Spotted and thumbed it lies,
(These only its disguise)
No fancy mount or tint—
Just an old silver print,

Done by a travelling quack,
Not as an art but knack,
When he in turn repairs
To country village fairs.

Yet some soft-hearted wight
Looks on it with delight,
Morning and noon and night,
And day by day—
Wears it upon his heart,
Thinks it of him a part,
Deems it his life's true chart
To show the way.

C. S. M.

CORRESPONDENCE.

February 22nd, 1898.

Dear Sir,—Will you please hand this letter to a member of your Society who has the time and desire to exchange with me the photos that I wish.

If you desire some American prints of the same character that I enumerate below, in exchange for the same number taken by yourself in your locality, I will send them to you by return post if you will advise me that you will send yours in exchange as soon as it is convenient for you so to do. I would prefer negatives, but fear that they are not available. My prints or negatives will be 4 by 5 inches or rather 11 by 14 centimetres in size, and would like to have the same size if convenient. I do this for the purpose of enlarging my album and to have views from all parts of the world.

The six prints that I wish are as follows:—

1—A view of your city's principal street at midday.

2—A view of the building considered most prominent in the history of your city or country.

3—A view of mountains or hills.

4—A view of sea or river.

5—A view in your forests or jungle.

6—A view illustrative of the native people and their dress and customs.

If you desire anything special in the way of American views, I will do my utmost to get them for you, and hope that you will write about this point particularly. If there is anything in the way to prevent you doing this, will you kindly write me at any rate.

Yours in Amateur Photography,

CLINTON C. HOLLENBACKE,

Columbus, Ohio, U. S. A.

EXTRACTS.

The Photography of Clouds.

[Abstracted from an article by T. Vincent in the *Bulletin de l'Association Belge de Photographic.*]

Let us congratulate ourselves on the adoption of the *International Atlas of Clouds* in all countries! Henceforth a single classification and a single nomenclature will be in use everywhere. This *Atlas*, however, is far from complete, giving only a list of the principal types of clouds, as has been shown by H. Clayton, of the Blue Hill Observatory, Massachusetts, who found that the new classification was not sufficient to aid him in his researches. The best way of filling up the gaps in this *Atlas* is by collecting together a large number of cloud negatives, as the International Committee would be unlikely to leave their work incomplete in face of the irrefragible evidence furnished by good photograms.

By collecting a number of cloud negatives, therefore, a great service would be rendered to meteorology, and to bring out the best results it would be necessary to commence by studying the classification and nomenclature recently adopted, and to make ourselves thoroughly familiar with the different types in the *Atlas*. In course of time when observing the sky, we should be struck by the differences between the clouds that pass before our eyes and those that have been defined and figured, and we should record by photography any aspects that appear to be new.

This work would be more quickly brought to a conclusion if a large number of persons took part in it, and we believe that it will be useful to furnish amateurs with such indications as will permit them to produce successful results. The difficulty that faces us when we wish to photograph clouds is that the blue, which forms the background, is very actinic and impresses the plate as much as, or nearly as much as, the clouds. We should not trouble the reader with the following hints, if we had not often heard of the difficulties experienced by amateurs in photographing clouds. We shall not give a large number of varied processes, but that which we describe is easy to follow and gives excellent result.

The lens we now employ is an anastigmat by Carl Zeiss, of Jena (1 : 8, F. 295 mm.). On the images of the clouds obtained by means of this objective three centimetres correspond to an angular measure of 5° 44′. This relation is very convenient in examining details (small cumuli, cirrus, etc.), but for ordinary work it would be preferable to obtain the clouds on a much smaller scale.

The point of view is fixed once and for all by focussing an edifice half a mile or so away and making a reference mark on the camera.

With the object of eliminating the effect of the blue of the sky and allowing the clouds to act, three yellow or green screens are employed. These are inserted in a ring and screwed on to the lens mount in front of the objective. The screens themselves may consist of colored glass or of cells holding certain dyes. These three light-filters should be of different intensities; the deepest only giving good results with very strongly lighted clouds. For that reason we have preferred to employ solutions.

A. Angot has recommended solutions of bichromate of potash of various strengths of concentration, enclosed in glass tanks. The latter are formed of two square parallel glasses joined together on three sides by rings of

glass also parallel, the whole being cemented together by Canada balsam. The cells are about $\frac{1}{4}$ inch in thickness and about 3 inches long in the side. Before filling the cells, it is necessary to dip the open extremity into a mixture of equal parts of melted yellow wax and resin. To close the cell before use, a small plate of ground glass, previously heated on a copper-plate, is pressed on the top of the cell already dipped in the cementing mixture.

We have employed two forms of cell. The first consists of a square of glass about $4\frac{1}{2}$ inches long in the side and $\frac{1}{4}$ inch thick. In this is cut a circular hole about 3 inches in diameter. A groove about one millimetre ($\frac{1}{25}$ of an inch) deep is cut on one of the faces of the glass plate from edge to edge, so that its continuation forms a diameter of the circle. By means of Canada balsam a thin glass plate is cemented on each side of the thick glass, thus forming a cell in the centre. The cell is filled by immersing it in the solution and afterwards stopping the exists, *i.e.*, the ends of the groove, with mastic or red lead. The objection to this form of cell is that it cannot be cleaned without taking it to pieces, and care is required not to allow too much Canada balsam to enter the cell when putting it together.

To make the second form of cell a piece of glass $\frac{1}{4}$ inch thick is bent almost in the form of a **U** and two glasses are cemented on to form the sides, as in the preceding case. This form is easy to clean, and the mouth can be closed by a plate of glass. With this thickness of cell the best strength of bichromate of potash solution to employ is a solution saturated with the salt at 70° F., to which is added seven parts of water. It is advisable to add, also, a few drops of hydrochloric acid to prevent a deposit forming on the sides.

R. Neuhauss recommends bichromate of copper (Zettnow's filter) to stop the blue rays, employing the following materials for making it: 44 parts sulphate of copper; $4\frac{1}{2}$ parts bichromate of potash; 250 to 500 parts of water; and half a part of sulphuric acid. The negatives obtained with this light-filter seem to be superior to those secured with bichromate of potash. A little pocket spectroscope will assist us to make sure that the light-filter extinguishes the blue and violet rays sufficiently. All the rays beyond the green should be completely cut off.

The exposure should be instantaneous in most cases, and it is rare for the clouds to be sufficiently slow to allow of an exposure of a second. On account of the shortness of the exposure and the absorption of light by the filter, it is not practicable to use a diaphragm. For this reason it is not possible to photograph all clouds distinctly. Frequently they appear more or less dark grey in hue, as the light that passes through the filter is not sufficient to impress the plate properly. It is necessary, therefore, to choose the whitest clouds and to neglect those that are greyish-white in tone. When the air is foggy and the sky is pale blue in color, the results obtained are generally bad. With a little practice, however, it is easy to judge of the actinic condition of the sky. Good negatives are obtained of clouds that are not far from the sun, but care is necessary to see that the parts of the same cloud are not too unequally lighted.

We have invariably employed Lumière ortho-chromatic plates, sensitive to green and yellow. The size 7×5 is a convenient one to employ, but for certain clouds 9×7 is a useful size; it is not advisable to use a smaller plate than $\frac{1}{4}$-plate.

The following is the developer usually employed:—

A.—Sulphite of Soda	... ...	100 parts.
Eikonogen	... ...	25 „
Hydroquinone	... ...	10 „
Water	... ...	1,000 „
B.—Carbonate of Potash	... ...	50 parts.
Water	... ...	1,000 „

When the light filters described above are employed, the following quantities are taken:—

A	... ...	80 parts.
B	... ...	10 to 30 „

a few drops of 10% potassium bromide solution being added.

Great care must be taken in developing plates sensitive to yellow and green, as they are easily fogged by the light used for developing. We employ great precautions, using two thicknesses of ruby glass in the dark-room lantern, covered by a sheet of cardboard having a window of the same glass, and the plate is kept covered as much as possible during development.—*The Photogram.*

Diogen—A New Developer.

Hardly had we accustomed ourselves to the name Ortol when yet another developer is given us from the same source. We have developed several glass negatives, also some Eastman films, with Diogen with perfectly satisfactory results, and although opportunity has not enabled us to verify the makers' claims as to its especial use in cases of under-exposure, sufficient has been seen to justify our giving here the instructions furnished for its use. It will be useful for those such as travellers who have little convenience for storing solutions, inasmuch as it suffices to prepare a single concentrated solution, and to dilute the latter with water according to the exposure of the plates. The concentrated stock solution is prepared by dissolving in succession in—

9 oz. of water
$3\frac{1}{2}$ oz. of sodium sulphite cryst,
7 drams of Diogen and
$4\frac{1}{2}$ oz. of potassium carbonate.

Filter the solution thus obtained. If preserved in well-stoppered bottles, it will keep for a long time.

According to the exposure, the character of the plate, etc., a suitable quantity of the concentrated Diogen solution is, at the time of using, diluted with water, a little of a solution of potassium bromide being added if necessary.

For correctly exposed plates of normal character, take—

Concentrated Diogen solution	... ...	4 drams.
Water	... ...	2 oz. 1 dram.
Potassium bromide solution (1 : 10)	... ...	2 drops.

If, however, it appears doubtful whether the plate has been correctly exposed, it is advisable first of all to ascertain whether the exposure is correct, insufficient, or excessive. This is done by means of a dilute solution composed as follows:—

Concentrated Diogen solution	... ...	85 minims.
Water	... ...	$3\frac{1}{2}$ oz.
Potassium bromide solution (1 : 10)	... ...	2 drops.

After bringing this developing solution to a temperature of 68 deg. Fhr., put the plate into it, rock the dish in the usual manner, and observe how long it takes for the first indications of the picture (in the case of landscapes the sky) to appear. If they appear at the end of

about four minutes, the plate is correctly exposed; if they appear later, it is under-exposed; if they appear sooner, it is over-exposed. A little practice will render it possible to judge by the difference in time the extent of the under or over exposure.

In case of under-exposure, take 4 drams or concentrated Diogen solution and, according to the degree of under-exposure, 2 to 3 oz. of water. The more the plates are under-exposed, the greater must be the quantity of water added.

In case of over-exposure, 4 drams of concentrated Diogen solution, and, according to the degree of over-exposure, $1\frac{1}{2}$ to 2 oz. of water and 2 drops to 85 minims of potassium bromide (1 : 10). The more the plates are over-exposed, the smaller must be the quantity of water added, and the larger the proportion of potassium bromide solution.

After development, wash the negatives thoroughly in the usual manner, and fix them in an acid fixing bath.

The wholesale English agents are Messrs. Zimmermann, and hence it may be obtained from all photographic dealers.—*The Amateur Photographer.*

Color Photography.[1]

By Professor Gabriel Lippmann.

I beg that you will allow me, ladies and gentlemen, to begin by thanking the President and Council of this Society for having done me the honor of electing me an honorary member, and also for awarding me the Progress Medal for 1897. I thought I could not show in a better way my sense of the great honor they have conferred upon me than by crossing over and showing you some specimens of these new color photographs. Your President on a recent occasion very clearly explained to you the principle that has been followed, and little remains for me except to exhibit and explain the apparatus which I employ.

The apparatus is very simple, and differs scarcely in any particular from that which is used for ordinary work. You have simply to take a transparent sensitive film of any kind—you are not bound to any particular substance; you may take, for instance, gelatino-bromide or albumeno-iodide of silver, or any other transparent sensitive film. The film must be transparent and grainless, such as the specimen I show you, quite free from cloudiness or milkiness. You have then to expose it in the camera, taking care that during exposure it is backed by a metallic mirror which is easily formed by a layer of mercury; you have simply to take a dark slide and make it mercury-tight, lay the plate in the slide, and allow the mercury to flow in a form a small reservoir at the back, so that the sensitive film on the glass plate is now backed by mercury, forming a mirror, [Professor Lippmann here showed a dark slide adapted for this purpose, and demonstrated its use; the mercury was contained in a small reservoir attached to the slide, and, by means of a piece of rubber-tubing, by lifting the reservoir the mercury could, when required, be made to flow into a cell, of which one side was formed by the sensitive surface and the other by the back of the dark slide, and to flow back to the reservoir after exposure.] When the plate has been exposed in the camera in the ordinary manner for the requisite period, the mercury is allowed to flow back into its reservoir, and the plate can then be removed and treated with pyrogallic acid, amidol, or any other appropriate developer, and fixed, washed, and dried in the usual manner; while the plate is wet the colors are not visible, but they appear as it gradually becomes dry. You observe, therefore, that except for these two important details—the mercury mirror and the transparency of the plate—the technique of the process is exactly that of ordinary photography. The first object of which I took a photograph was the spectrum, and I now show you the result; as a physicist I had to take the spectrum, because it is composed of simple colors, and the problem is thus simpler than where composite colors are concerned.

Now, how is it that we see the color? The photographic operations are the same as in ordinary photographs, the result of the operations is the same, a similar deposit of reduced silver is obtained, and the materials of which the image is composed are the same as those in a colorless plate. The difference is that the deposit has acquired such a structure that it decomposes the light by which it is illumined, and sends back to the eye of the observer elements of white light, which together make the natural colors of the object. In the same manner the colorless drops from the rainbow. A soap-bubble appears colored, although consisting of a colorless solution, and mother-of-pearl appears colored, although made of colorless carbonate of lime. It is a phenomenon of interference due to the structure which the deposit has acquired; if you were to use a plate without a mirror you would get an ordinary negative, but the presence of the mirror changes everything, and this is how it is done: You know that light is made up of vibrations, just as sound is; these vibrations give rise to light-wages that rush through the ether and the plate with a velocity of 300,000 kilometres per second; therefore, they impress the plate more or less strongly, and thus leave a design of different intensities of the image, but as they rush through the plate they leave no record of their own form. And this is what I mean by their own form: each ray of light of a certain color has a certain structure; it is made up of waves which have a certain wave-length; you know a wave-length is the distance between the crests of two succeeding waves; red has a comparatively great wave-length, blue has a much smaller one, and the intermediate colors have each a distinct and intermediate length of wave. If you put no mirror, each train of waves rushes through the plate, and wipes off every record of its own form by reason of its velocity; you cannot expect a thing which moves the velocity of 300,000 kilometres in a second to give a photograph of itself. If you put a mercury mirror behind the plate, then the following phenomena occur: the light is reflected back on itself; the light rushes in with the velocity of light, and rushes out again with the same velocity; the entering and issuing rays interfere, and the effect of the interference is that vibration takes place, but the effect of propagation are stopped, and instead of having propagated waves we get stationary waves--that is, the waves now rise and fall, each in its own place: they pose, therefore, in the interior of the film and impress their form upon it, the largest movement giving the strongest impression, and where the movement is naught the impression is naught. So that you have the form of the vibration impressed in the interior of the film by the photographic process, and the photographic film has really acquired now the structure of the incident rays, because they have become stationary and impress their form upon it. The result is, that if you look through the film you

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1 Read by the author before the Royal Photographic Society of Great Britain, Dec. 14, 1897.

see nothing special; it looks like an ordinary negative; but if you look at it by reflection, then you see it colored. And this for the following reason: suppose at one place the plate has been impressed by red light, the red light has impressed its structure upon that part of the plate, and that part of the plate is now able to reflect back to our eyes only the red part of the white rays—only the red element which is a component part of white light, and similarly with every part of the spectrum; it is a mere mechanical adaptation of the form of the deposit to the form of the light vibrations. [Professor Lippmann here showed, by vibrating a length of india-rubber tube, the difference between propagated waves and stationary waves; he also projected on a screen the image of a soap-bubble, showing the color-reflection from it.]

Now, this is a theory; we want some confirmation of the theory, to show by experiment that the colors we see are really due to interference. There are a good many demonstrations of that; one of them is that you get the colors by any chemical means which give you a fixed photograph; you are not obliged to take a silver salt; you can work, for instance, with bichromate of potash and albumen, or bichromate and gelatine, and get colored photographs. Moreover, there are a good many experiments which can be made to show that the colors are really due to interference; I will show you only one of these, which is as follows: I have told you already that the colors are not visible while the plate is wet; you must wait until it is dry. If you take the dry picture and make it wet, the colors disappear; if, instead of plunging it into the water, you breathe upon it so as to make it somewhat damp, the gelatine swells and you see the colors gradually change and disappear, and gradually return as the drying takes place. What is the reason? It is that the gelatine or albumen swells by the action of water, and the interference between the maxima in successive planes is enlarged and has no longer the value necessary for reflecting a particular element of light; as the drying proceeds the film contracts, and the proper colors gradually return. [A photograph of the spectrum, in colors, was here wetted and projected on to the screen, when no colors were visible; it was then treated with alcohol and again projected, and as the film slowly dried the colors gradually appeared upon the screen.] Another proof of the theory is that the interference colors change with the incidence; if, for instance, you look slantingly at a soap-bubble you will see the red turn successively green and blue, and the same is the case with these photographs which I am about to show you—they must be viewed at the normal incidence; if you look at them slantingly you see the colors change, the red turning successively to yellow, green, and blue. Moreover, the colors appear only when you look at the photograph in the incidence of regular reflection—that is, you have to let the light fall on the photograph and put your eye in the direction of the regularly reflected ray—if you look from another point you see only a colorless negative. If the colors were laid on with a brush you would not get that effect, for you would see the colors in whatever incidence; this is rather a fortunate circumstance, for it makes the touching up with ordinary colors impossible and proves the authenticity of the photograph.

That is the first part of the problem, the part which most interests the physicist—namely, to fix the simple colors of the spectrum; but, of course, we all want to have other colors fixed—the colors of nature. These are composite colors, as you know, all—however complex they seem—of the rays of the spectrum; so that the question is, Will a superposition of simple colors give the same effect as if each simple color were separated? Here again, as we might expect, the experiment succeeded, and I will show you some results obtained by photographing various kinds of objects. The mathematical theory is somewhat more complicated, and there is not time this evening to attempt to go into it; I will simply say that it is very much akin to the theory of the rendering of composite sound by the phonograph. The theory of the phonograph is very simple if you consider only simple sounds; if you consider composite sounds—the sounds of the human voice—the sounds are made up of simple sounds, and they are rendered by the phonograph as perfectly as simple sounds; the theory of that is the same as the theory of the superposition of simple vibrations. I will now simply show you my results, which you will see include every composite color, and that white is reproduced equally well. It is necessary to use an isochromatic plate, transparent and grainless, as before, back it with mercury, expose, and develop.

Professor Lippmann then showed, by means of a megascope, a series of photographs produced in the manner which he had described, including stained glass, landscapes, flowers, and portraits from nature In reply to questions he made the following further remarks:

The exposure given in the case of a portrait taken by M. Lumière, and now exhibited, was, I believe, about a minute, and the same period sufficed for a view at Biarritz; in Paris an exposure of from two to three minutes is required for similar subjects. The pictures have been projected for your inspection by means of a megascope—that is, the light is sent from the electric source on to the photograph, and is reflected by the photograph through the projecting lens on to the screen. As color sensitizers, I use cyanine for red and quinoline red for green in very small proportions—about one-fiftieth of a milligramme to 100 grammes of emulsion, or one part in 500,000 parts. For twelve years my investigations were impeded on account of the difficulty which I experienced in the preparation of a transparent film; I tried solutions of bromide of potassium and nitrate of silver in water, of various strengths, and always got a precipitate, which is not surprising; but I had not thought that if instead of using pure water you use water containing gelatine or albumen you get no precipitate, and by adopting that method I solved the difficulty. I add the color sensitizer before coating the plates; very good results may be obtained by dipping, but they are not quite so satisfactory. I have tried to reproduce the pictures by printing in contact with another plate, but have not yet succeeded in doing so, although I am quite sure it is possible; the only condition necessary is that the plate shall show complementary colors by transparency, and these can already be made faintly visible. If the film bearing the image were stripped from its glass support and the superficial area enlarged, a new set of colors would be produced in consequence of the change in the wave-length; the alteration is analogous to that which occurs when the plate is wetted, but in the opposite direction, the film in that case swelling, whereas, if expanded superficially, it would be reduced in the thickness. If the colored photographs are viewed obliquely the colors tend to blue rather than to red, a fact which is observed also with regard to soap-bubbles, Newton's rings, and all interference phenomena, because the difference of wave between the two rays which interfere is composed not only of that part of the way which is in the interior of the laminæ, but there is a small exterior way.

[A diagram was drawn at this point.]

When working in sunlight it is advisable to place before the lens a screen to cut off the ultra-violet rays; when projecting the images, a better result is obtained if a piece of black glass is cemented to the back of the plate for the purpose of preventing reflection from the back. There is a certain degree of elasticity in the exposure required, but I think much less than in monochromatic photography; this arises from the fact that we keenly appreciate differences in color, whereas differences in gradation in monochrome are not so noticeable. If the component parts of any given color are not in the proper proportion we get a change in color; for instance, if there is too much red in what ought to be white you will see it green, and the eye is very sensitive to that; if you do not expose and develop properly you have no proportionality between the deposit and the intensity of vibration, and the color will change. The most suitable thickness of the sensitive film is secured by flowing the gelatine over the plate, as with collodion, the film being then about one-twentieth of a millimetre thick—say, as thick as a piece of cigarette paper. A copy or an enlargement in colors could be made from an original by projecting the image in the manner which has been done to-night, a sensitive film back with mercury being substituted for the screen of white paper which has been used here. For ordinary examination the plates must be looked at as a daguerreotype is viewed, and the colors are easily discernible in diffused light.—*Wilson's Photographic Magazine.*

Professor Joly's Method of Colour Photography now Practicable for the Amateur Photographer.

When Professor Joly read his paper on a method of photographing in natural colours, before the Dublin Royal Society (June 26, 1896), the method he proposed must have been looked upon rather as a bare possibility in a physical laboratory than as a method capable of being practised by the ordinary amateur tourist who may wish to obtain records in colour of that which he sees, and to reproduce these in lantern-slide form, or as positives to be shown in a special album. In this case, as in many other cases, skill, energy, and perseverance, with a full taking advantage of progress in collateral branches, has resulted in such progress that the amateur may now produce true heliochromes by using his ordinary camera and lens, the extra operations in the field consisting of the use of a lined screen in the dark slide in front of the plate, and of a yellow glass before or behind the lens. Commercial orthochromatic plates are used, these plates being also excellent for general work, so the tourist need not take two kinds of plates with him. All essentials for Dr. Joly's process are now being sold by the Natural Colour Photo Co., of 36, College Green, Dublin.

We should at this stage endeavour to make the essential features of the process clear to our readers. In the ordinary forms of three-colour heliochromy three separate negatives are taken, each by a coloured light corresponding to a primary colour sensation. Positives from these being illuminated with lights of suitable tint, and the images superimposed, the original scene is built up to the eye with all the tints of nature.

In Dr. Joly's process three negatives must be taken as in the case just mentioned, but all three negatives are taken on one plate, by the same exposure, and with an ordinary camera. To understand the principle of Dr. Joly's method, let us suppose that the negative plate is theoretically plotted out into narrow strips numbered 1, 2, 3—1, 2, 3—1, 2, 3, and so on until the whole area is covered. If all the No. 1 strips are exposed we shall have the essentials of a negative, but it will be discontinuous, and obviously will cover only one-third of the area of the plate; but if the strips into which the plate is plotted out are sufficiently narrow, the subject will appear continuous and perfect to the eye. In a similar way we may have a totally different subject on the No. 2 strips, and a third subject on strips No. 3. All that would be required to produce the three subjects on one plate would be to place in front of the plate, when exposed, a screen evenly ruled with opaque lines twice as wide as the transparent strip intervening. After the first exposure the screen is shifted by as much as the width of the transparent strip, and another subject can be impressed, the same being done before the third exposure. Such a composite negative would give a transparency showing a jumble of the three subjects, but the ruled plate used to partially screen the negative plate during exposure could be so placed over the transparency as to cut off any two subjects, when the third would flash out clearly and isolated; but by shifting the screen one or two degrees the transformation would be complete to either of the other subjects. Here then we have the principle of Professor Joly's method of taking the three negatives of the heliochromic triplet on one plate. During exposure a screen ruled in narrow strips of three colours closely packed together, is set in front of the negative plate, and a transparency being made from this negative, a similarly ruled screen is fixed against the transparency in proper adjustment, when each of the three transparencies on the plate will be illuminated by its appropriate colour and the effect of a transparency in natural colours is realised.

Now that the Natural Colour Photographic Co. of Dublin, is supplying the two necessary screens, with instructions such as will enable any moderately careful worker to produce colour photographs and to project them on the screen, we may expect that exhibitions of such heliochromy should become a leading feature at the various meetings during the next winter season; but we would suggest the making of such a black ruled screen as we describe above, as a means of illustrating the principle of the method, and incidentally showing the curious possibility of three distinct subjects on one plate.

A pamphlet which has been sent to us, consisting of twelve small pages, and issued by the company mentioned above, gives full practical directions as to the use and adjustment of the screens in making transparencies for projection, or for exhibition by transmitted light, but we are surprised to find no mention of Professor Joly's name, nor any concise general explanation of the principles involved. Clear and useful as the pamphlet may be to one knowing of Professor Joly's work, and understanding the scientific principles on which it is based, we fear that the pamphlet if put in the hands of the amateur would too often seem a mere jargon of terms, and would suggest nothing so much as a bogus colour process. There is plenty of blank space inside the cover for some additional and general information.—*The Amateur Photographer.*

Backed Plates—A Note Thereon.

By W. T.

Once or twice lately I have been troubled by unequally stained negatives when using ready backed plates, and when the backing medium employed has been of the caramel order.

It only became noticeable when the negatives, having dried, were examined in daylight, the appearance they then presented being as if a thin layer of scum were embedded in the film. This in several instances proved sufficiently marked to interfere with the printing value of the negative.

The cause of the trouble arose from having put the plate with its backing on, into the dish, and then proceeding with development in the ordinary way.

The backing, being soluble, became partially cleared off the glass plate, and held in solution.

Had the dish been kept constantly rocking during the entire time development was continued, in all probability no sediment could have formed on the gelatine film, and the trouble from stains not arisen.

In these instances, however, a largely diluted developer having been used, and being of the modern type, either amidol or metal, there was no need to keep the dish constantly on the move, just a tilt now and then being sufficient to ensure even development of the plate taking place.

Each time the dish was given a shake, the loosened backing would be disturbed, and mixed with the solution; then on the dish being left for a while perfectly still, the solid matter would immediately commence settling down, and this time on the film side of the partially developed negative, and once it came into contact with the soft gelatine film, trouble naturally might be expected.

The tenacity with which it sticks once it has been allowed to reach and rest on the plate for a few moments is really surprising, judging from negatives which have been so effected, for generally my own practice, when a plate has become ready for passing into the hypo bath, is to give it a good sharp rinse under the water-tap, then fix, and finally another rinse, this time with the tap turned almost full on, letting the strong volume of water flow over the plate, first in one direction and then the other, and meanwhile passing lightly over the film either with a plug of cotton wool, or, failing that useful dark-room item being available, then with one's bare fingers; a minute's treatment of this kind gets rid of the bulk of hypo, at any rate such as is on the surface, and a quarter of an hour or twenty minutes' further washing in running water, with another final rinse under the tap, may be relied on to sufficiently get rid of hypo, to remove any fear of trouble arising therefrom afterwards. Not so, however, with regard to the deposited backing; this appears to resist even the above somewhat through treatment, having apparently become more or less incorporated with the wet gelatine, and when it has been unequally so then there is risk of the usefulness of the negative being seriously impaired.

The result of several experiences such as mentioned has been to induce me to return to the practice of clearing off all the backing with a damp sponge prior to commencing development, by which means one can be certain of having good clean negatives without any staining of thy film, for, however useful it may be, this staining, in faulte negatives, is by no means a matter to congratulate oneself upon, when the negatives are properly made, and do not require any such doubtful aids.

When the backing has been done with stained collodion, no risk of the nature above mentioned need be feared, but even in this latter case the backing has always seemed more readily removed before the plate has passed through a developer, fixing bath, and then being drained and dried.—*The Amateur Photographer.*

Pyro-Acetone Developer.

For one purpose the pyro-acetene developer seems peculiarly well adapted, and that is for developing Röntgen ray negatives. To get the best possible results I have always preferred pyro-soda, but have generally used metol and hydrokinone, as, owing to the prolonged development necessary, I have found that pyro-soda produced negatives of such an extremely non-actinic character that printing became a very tedious operation. Pyro-acetate,-however, produces negatives with all the good qualities of pyro-soda, *i.e.*, utmost detail with greatest density, yet at the same time, rapidly-printing negatives. One feature of this developer is that it produces a deposit right through the firm, even with the thickly-coated X ray plates manufactured by Messrs. Lumière, with which alone I have tried it. I generally use the developer as made up by Messrs. Fuerst Bros., diluting the normal developer with an equal quantity of water, and using no bromide I used to be troubled with frilling, but since adopting acetone I have not had a symptom of it. If any of your readers will give it a trial I feel confident they will be pleased with the results. Only one caution is necessary—develop until the image is quite invisible by transmitted light in the dark room and shows strongly on the back of the plate. With these plates and this developer I have been able to obtain much more contrast between the bones and flesh in the thickest parts of the body than hitherto—*Photography.*

EXHIBITS FOR MARCH.

Mrs. L. P.—A WELL POSED GROUP.—Print over-exposed and consequently somewhat flat.

Mrs. B.—THE TANNYCATCH.—The only fault in this is a want of slightly more exposure or a weaker developer, the contrasts being somewhat great.

THE GARDENER.—Contrasts too great and want of details: longer exposure and weaker developer (weaker in iron) would have produced a better effect.

NOTES.

CARE OF NEGATIVES.

All photographers aim at making good negatives, but when obtained it seems a pity that greater care is not taken of them. If a piece of punice stone be kept in the dark-room and passed round the edges of the finished negatives, it will conduce to comfort in handling them, and cut fingers will soon be rare.

TO COPY PHOTOGRAPHS.

I find the following the best method for copying photographs :—Fasten the photograph on a board by means of a few drawing pins, and illuminate with two lamps (one on either side), placing them about 12 or 18 inches from the print. Shade the lens with a piece of cardboard so that the light does not fall on it. Use a slow isochromatic plate, expose about eight minutes with *f*/16, and develop with plenty of pyro (in combination with soda).—H. A. J.—*The Amateur Photographer.*

[library stamp]

COMPETITIONS.

(Open only to Members of the Society.)

SUBJECT FOR MONTHLY COMPETITIONS IN { MAY.—*Clouds.* JUNE.—*Foliage.*

SUBJECT FOR SPECIAL COMPETITION IN MAY "*The Gorgeous East.*"

RULES.

1. *Two Special Competitions shall be held, in each year, in addition to a monthly competition.*

2. *The Committee shall select the subjects for the Special Competitions, and notice of the selected subjects shall be announced in the Society's Journal in February and in July of each year. The subject for each monthly competition shall be selected two months in advance by the members present at the monthly meeting, and shall be notified in the next issue of the Society's Journal.*

3. *Pictures, &c., competing for Prizes at the Special Competitions must reach the Secretary by the last day of January and of May, and those competing at the monthly competitions must arrive in time to be shown at the monthly meeting.*

4. *Prizes will consist of Silver and of Bronze Medals, and of Certificates of Merit.*

5. *Not more than one Silver and one Bronze Medal shall be given at each Special Competition, and one Silver and one Bronze Medal may also be given at these competitions for excellence in copying, enlarging, lantern slides, or any other special branch of photography. One Silver and one Bronze Medal shall be awarded half-yearly to the exhibitors who obtain the highest and the next highest marks respectively at the monthly competitions. The number of Certificates of Merit granted at each competition is left to the discretion of the Judges.*

6. *A member may receive only one Silver and one Bronze Medal in the special, and one Silver and one Bronze Medal in the monthly, competitions, held during the same year; but should a member who has been adjudged a medal be disqualified under this rule from receiving it, he shall be given a Special Certificate instead, marked 1st or 2nd Prize.*

7. *A Special Committee of three members shall be appointed Judges by the General Committee to carry out, subject to these Rules, all arrangements connected with the competitions.*

8. *The Special Committee shall be appointed after the Annual General Meeting in January, and shall hold office for one year, and any vacancy occurring will be filled up by the General Committee.*

9. *The Special Committee shall decide upon the merits of the pictures, &c., sent in for competition, and their decision shall be final. The system of judging the monthly exhibits shall be by awarding marks, a record of which shall be kept by the Judges, the marks being totalled and the results declared half-yearly. For this purpose, only the three highest marks awarded at each competition to each competitor shall be recorded, but not the aggregate marks gained by each for a number of exhibits.*

10. *If any member of the Special Committee is a competitor, the General Committee shall appoint a non-competing member to act as Judge at that competition instead of the competing member.*

11. *No exhibit shall compete twice, but pictures, &c., already exhibited elsewhere, may be sent in for the competitions.*

12. *Lantern slides sent in for competition shall be in sets of six, and shall be judged upon the screen.*

13. *The Special Committee shall not award any Prizes or Certificates, unless they consider the exhibits to be worthy of such distinction.*

14. *Each competing exhibit shall be the entire work of the exhibitor, and when sent in shall be accompanied by a Certificate in the annexed form:—*

> "*The (1) Arranging, (2) Exposing, (3) Developing, (4) Retouching (if any), (5) Printing and (6) Trimming and Mounting were done by me without assistance.*"
>
> ________________________
>
> *Member, A. P. Socy. of Madras.*

15. *All pictures for the Special Competitions shall be mounted, and may, at the competitor's option, be framed but not glazed. Those for the monthly competitions need not be mounted, but should be trimmed.*

16. *Each competing picture should have a name or title, which should indicate the nature of the subject.*

17. *No competitor shall be allowed to send in more than six pictures to compete for any particular Prize, but the same member may compete in all branches specified in Rule 5.*

18. *The pictures gaining 1st and 2nd Prizes at the half-yearly competitions, and the best pictures sent for the monthly competitions, shall, when practicable, be reproduced in the Society's Journal.*

19. *To give up-country members an opportunity of seeing the competing pictures at the special competitions, the pictures shall be circulated to all members of the Society, not residing in Madras, who apply to see them. As this arrangement can only be carried out by the cordial co-operation of the members themselves, they are expected to forward the pictures without delay to the next member, and to send one of the accompanying post-cards to the Secretary, so that by this means the progress of the pictures may be traced.*

List of Members whose Dark Rooms are available for use by Members of the Madras Amateur Photographic Society.

T. P. S. NAGARATNAM, 47, Malayappen Street, Black Town.
E. MAENNIG, Buckingham House, Tranquebar.
J. CHOKANNA, AMILDAR, Bowringpet, Mysore State.

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FOR SALE.—"Bullet" Hand Camera New by the Eastman Co., complete with roll holder, dark slide, 2 developing frames, and one roll of film.

Takes plates or films—size of picture $3\frac{1}{2} \times 3\frac{1}{2}$.

Price Rs. 40.

Apply to CAPT. SWANSTON,
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NOTICES.

Members of the Madras Amateur Photographic Society are permitted to use this column free of charge for two insertions of each advertisement—all subsequent insertions of the same being chargeable at 2 annas a line. When an advertisement becomes liable to this charge, it will not be inserted unless a postal order or stamps to the value of the charge are previously sent, addressed to Graves, Cookson and Co., Scottish Press, Mount Road Branch, Madras. Advertisements received up to the 5th of each month will be inserted in the next issue of the Journal; those received after this date will be held over for the subsequent issue.

Subscribers, and others who are not regular dealers may make use of this column for advertisements by paying at the rate of 3 annas a line.

Rates of Subscription, Payable in Advance.

——	India, including Postage.	Europe, including Postage.
Twelve months ...	5 Rupees ...	8s.
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N.B.—The Journal is issued on the 15th of each month, and is posted free to members of the Madras Amateur Photographic Society.

Entrance Fee, Rs. 5.—Annual Subscription *for Resident Members, Rs. 15; for Up-country Members, Rs. 12. Members joining after 30th June pay Half-year's Subscription.*

Candidates for Election—*should be proposed by one member and seconded by another; and they will be ballotted for at the following meeting.*

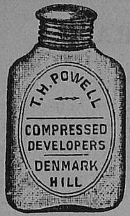
Ordinary Meetings—*of the Society are held on the first Friday of each month at 6 p.m. and members are at liberty to introduce visitors.*

Letters to the Editor—*should be addressed care of Messrs. Graves, Cookson & Co., Scottish Press, Mount Road Branch, Madras.*

Letters to the Honorary Secretary—*should be addressed to S. Jackson, Esq., care of Messrs. Binny & Co., Madras.*

Letters to the Honorary Treasurer and Remittances—*should be addressed V. G. Lynn, Esq., care of Messrs. Best & Co., Madras.*

Communications regarding the issue of the Journal—*should be addressed to the Publishers.*



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Being Portable, Soluble and Permanent.

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Specially recommended for use in hot climates. Pyro "Developoids" or Developing Pellettes, Compressed Pyro and Soda, Compressed Hydrokinone Developer, Compressed Eikonogen and Hydrokinone Developer, Compressed Gold Toning Baths and Platinum Baths. Of all the usual Dealers.

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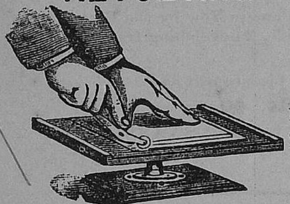

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If you want to mount your prints quickly and easily, use this cutting table in conjunction with Hunter's Celebrated Wheel Print Trimmer.

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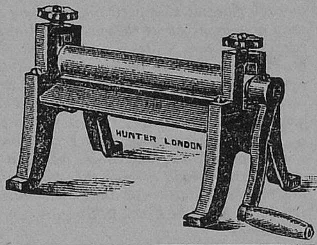

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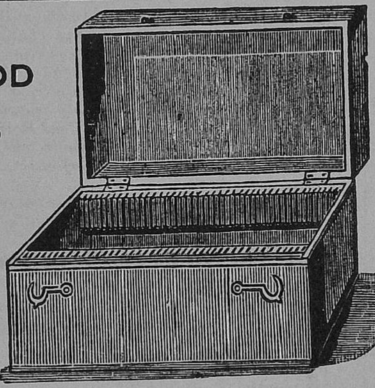

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Best quality Mahogany, Slide lid, well made and really light-tight.

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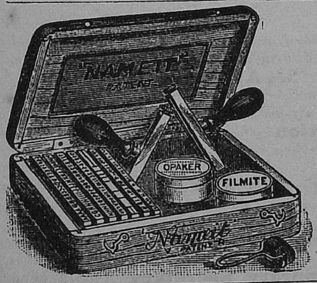

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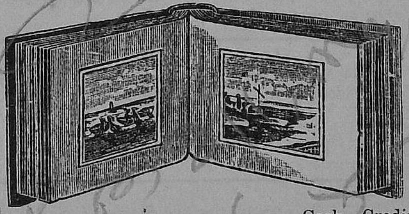

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M. 2,	to hold a 12 c-d-v. 1 on a page...	1 4	1 7
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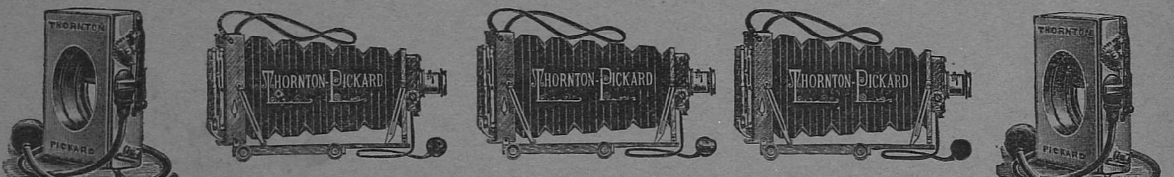

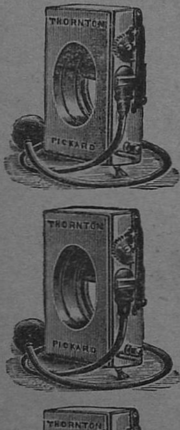

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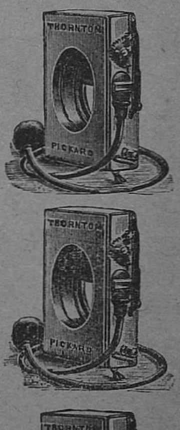

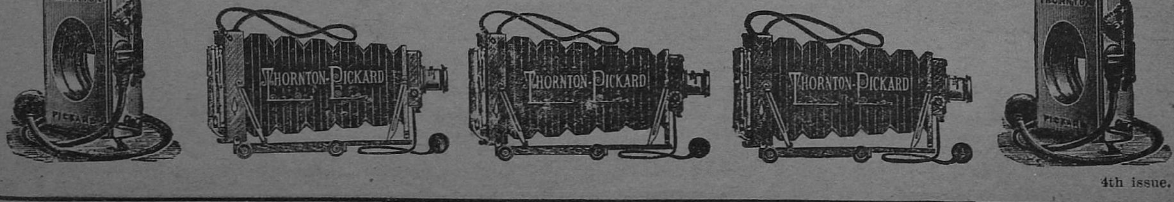

4th issue.